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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/743,328

12/23/2003

Hideyoshi Okita

2888-101

5586

6449 7590 02/27/2007
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EXAMINER

STULII, VERA

ART UNIT

PAPER NUMBER

1761

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
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3 MONTHS

02/27/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/27/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

Office Action Summary

Application No.

10/743,328

Applicant(s)

OKITA, HIDEYOSHI

Examiner

Vera Stulii

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 30-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>08/02/05, 06/22/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13 and 17-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Narumiya et al (US 6,217,928).

In regard to claims 1-7, Narumiya et al disclose “a process of freezing a group of sushi ... comprising: placing the group of sushi on a vessel, and disposing the vessel in a freezer and freezing the group of sushi, the freezing comprising: a first freezing step in which the group of sushi placed on said vessel is disposed in the freezer, and the temperature of a rice ball part of the sushi is reduced from an initial temperature to a freezing point in a range of 0°C to -4°C.; a second freezing step in which the temperature is reduced to a temperature in the range from the freezing point to -10°C and maintained at this temperature for a predetermined period of time until passing of a maximum ice generation temperature range” (Claim 1). Narumiya et al disclose that “second freezing step being carried out for a time which is set to be longer than the first freezing step” (Claim 1). Narumiya et al disclose that “the time of said second freezing step is set to about 13 to 35 min” (Claim 4). In regard to claim 8, Narumiya et al disclose the gradient of the second freezing step of 0.5 °C /min (Claim 6). In regard to claims 9,

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10 and 11, Narumiya et al disclose air-purged packaging step after freezing (Fig. 7, Fig. 6). In regard to claim 12, Narumiya et al disclose "the sushi is disposed in vessels in the freezer with a plurality of sushi pieces held in rows in each vessel, and the freezer then is preliminarily cooled down to about 0 to -15°C and freezing is started, the freezing comprising a first temperature reduction step in which the temperature of the freezer is reduced from the preliminary cooling temperature to about -30°C in about 5 to 25 minutes from the start of freezing of the sushi, and a subsequent second temperature reduction step to a temperature lower than -30°C" (Claim 10). Narumiya et al disclose that "the sushi is disposed in the freezer in an enclosed state" (Claim 23). Narumiya et al disclose that frozen sushi were removed from the freezer and packed at temperature of 25°C. In regard to claim 13, Narumiya et al disclose that "it is suitable to freeze the food in what is commonly called a slight air supply space with air supplied at a minimum rate into the freezer" (Col. 8 lines 12-15). In regard to claims 17-29, it is noted that "first predetermined temperature" is a room temperature before freezing which is approximately 20-25°C and is in the range recited. The "second predetermined temperature" corresponds to the "first freezing step" and the temperature in a range of 0°C to -4°C (see above). The "third predetermined temperature" corresponds to the "second freezing step" and temperature of -10°C (see above). In regard to claims 18 and 19, Narumiya et al discloses "that a second freezing step in which the temperature is reduced to a temperature in the range from the freezing point to -10°C and maintained at this temperature for a predetermined period of time until passing of a maximum ice generation temperature range (Claim 1).

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narumiya et al (US 6,217,928) in view of Grewar (US 4,325,221).

Narumiya et al is taken as cited above.

Narumiya et al do not disclose directing supply of liquid carbon dioxide into the freezer.

Grewar discloses a method for reducing the temperature of food articles. Grewar discloses a method which prevents or at least greatly reduces moisture loss from food articles to be refrigerated" (Col.2 lines 30-33). Grewar discloses "a method of refrigerating a moist article comprising the steps of quick chilling a thin outer layer of the article to seal the moisture therein by contacting it with a cryogenic liquid and

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subsequently cooling the article" (Col. 2 lines 40-44). Grewar discloses liquid carbon dioxide as a "cryogenic liquid" (Col. 2 lines 63-64).

Since Narumiya et al disclose method of freezing moist food articles, and Grewar discloses a method which prevents or at least greatly reduces moisture loss from food articles to be refrigerated using liquid carbon dioxide, it would have been obvious to modify disclosure of Narumiya et al and employ a refrigerating method using liquid carbon dioxide in order to reduce loss of moisture as disclosed by Grewar.

Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narumiya et al (US 6,217,928) in view of Lamb (4,399,667).

Narumiya et al is taken as cited above.

Narumia et al do not disclose controlling an incident angle between dry ice in freezer and a circulation of air within the freezer.

Lamb discloses apparatus for chilling a plurality of food trays. Lamb discloses "chilling system for a food service cart which supports pieces of dry ice in a bunker for maximum heat transfer relative to a stream of circulating air moving through the cart" (Col. 1 lines 61-64). Lamb discloses that "the construction of the chiller bunker 42, with its channels 66, greatly enhances the efficiency of heat transfer since the downwardly moving cold CO₂ gas can be readily picked up by the circulating air stream from the fan 24" (Col. 4 lines 25-27). Lamb discloses that the fan 24, by being positioned at an angle helps direct air into the channels 66 and under the dry ice (Col.4 lines 28-30).

Since Narumia et al teaches method of freezing food articles and Lamb discloses apparatus for chilling and enhancing the efficiency of heat transfer, it would have been

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obvious to modify disclosure of Narumia et al and to control an incident angle between dry ice in freezer and a circulation of air within the freezer to enhance the efficiency of heat transfer as taught by Lamb et al.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Stulii whose telephone number is (571) 272-3221. The examiner can normally be reached on 7:00 am-3:30 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VS


KEITH HENDRICKS
PRIMARY EXAMINER